

PHENIX Run16 status

Denis Jouan

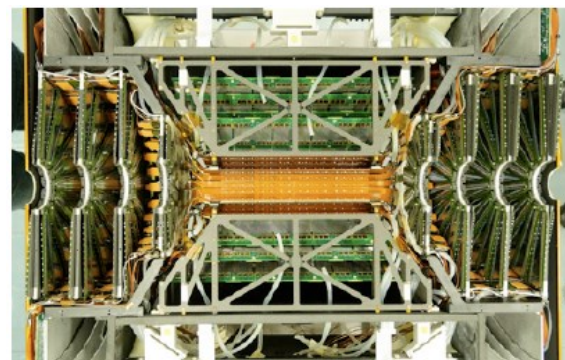
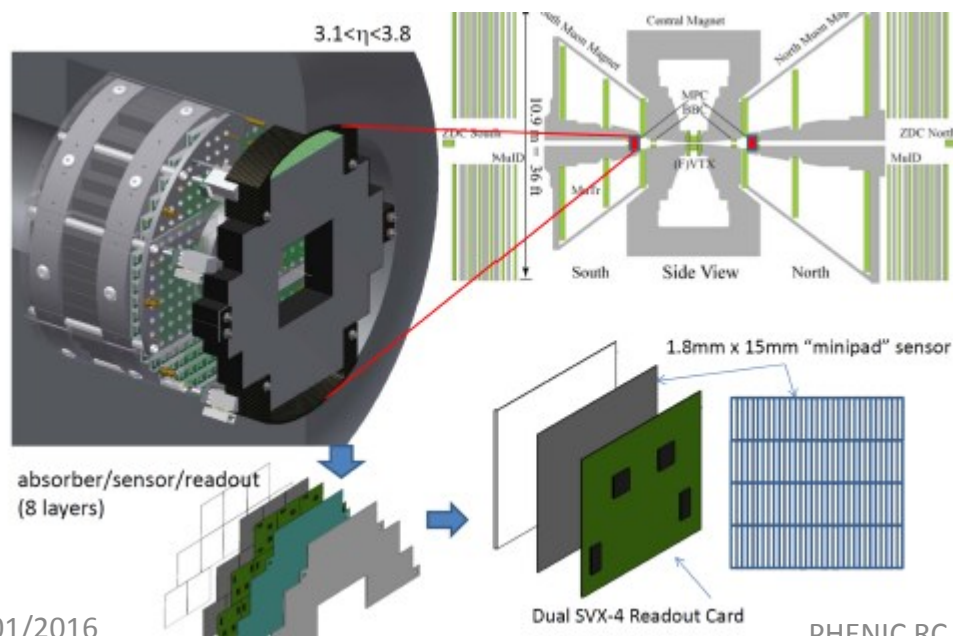
Run16 PHENIX RC

Early presentation...

- I will arrive at BNL on the 6th, tomorrow evening

Context

- Last PHENIX run
- Detector: with FVTX, VTX and MPC+MPC-EX
- AuAu 200: Increasing the dataset, HF-> double the data, complete HF measurement
- dAu energy scan : onset of QGP in small systems



Au-Au 200 GeV

- **Au+Au @ 200 GeV for 10 weeks**

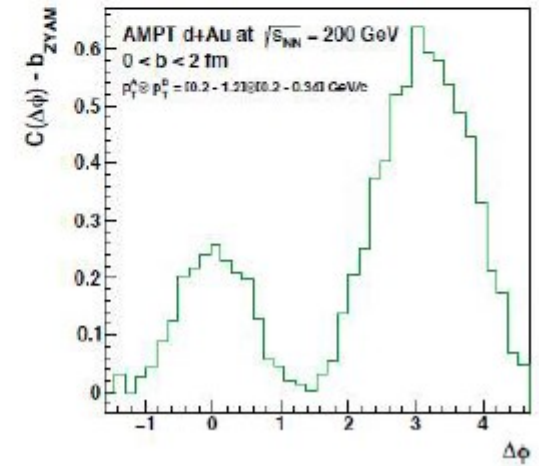
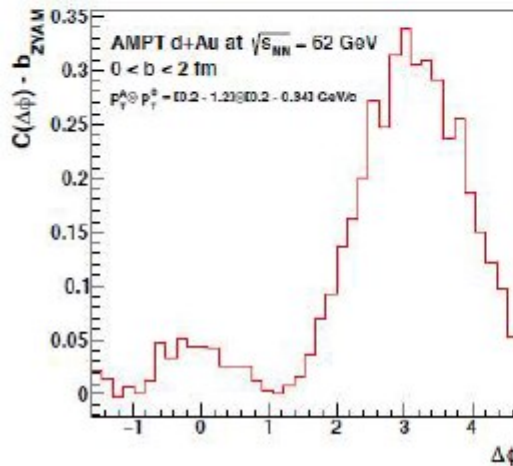
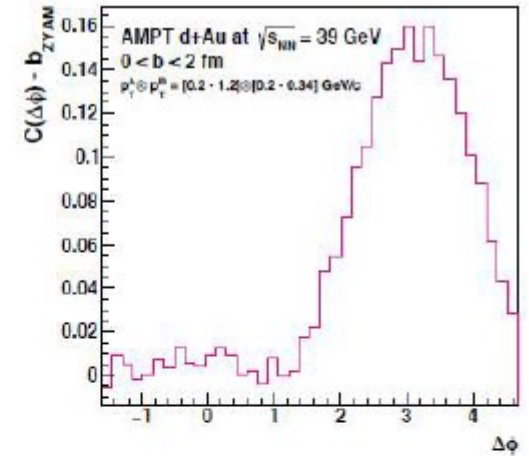
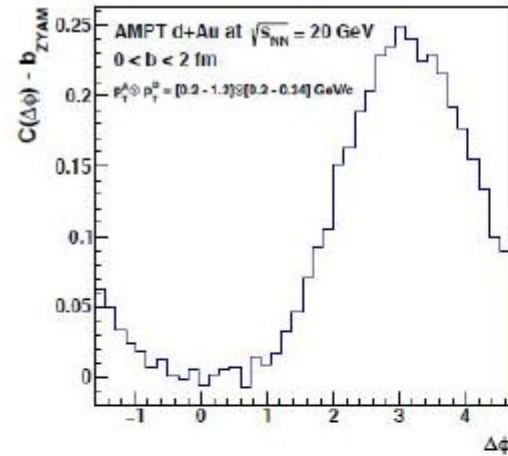
Goal is 1.8 /nb (12 billion minimum bias events)

recorded within $|z| < 10$ cm (added to the 2.3 /nb recorded in the longer and very successful Run-14)

- An increase of statistics, in particular if the z-vertex distribution is sharper.
- With the ultimate PHENIX set up, bringing additionnal information for tracking in HF studies: double the data, complete HF measurement

BES at RHIC: *The rise of the ridge*

- Same side long range correlations appears in dAu 200GeV, Au side
- What evolution with energy ?
- Sensitive to inner processes (melted strings, QGP, ...)



This is simulation. What are error bars in measurements ?

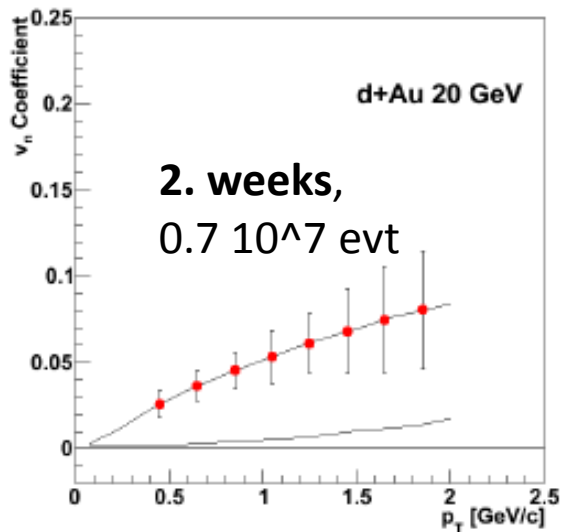
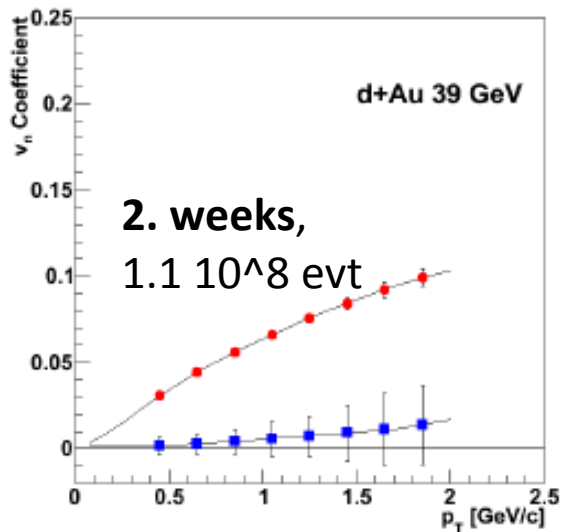
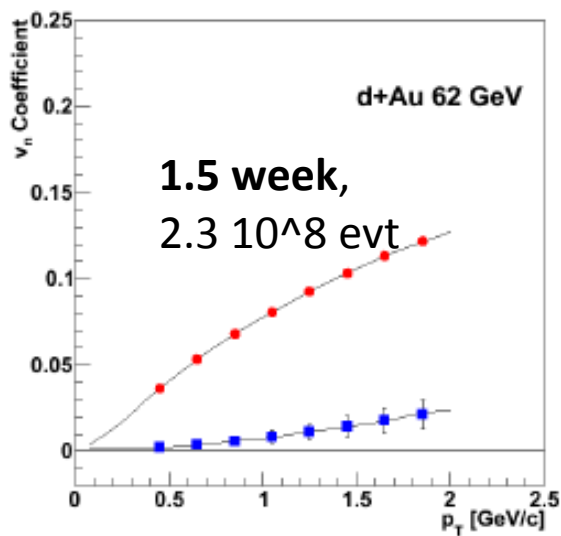
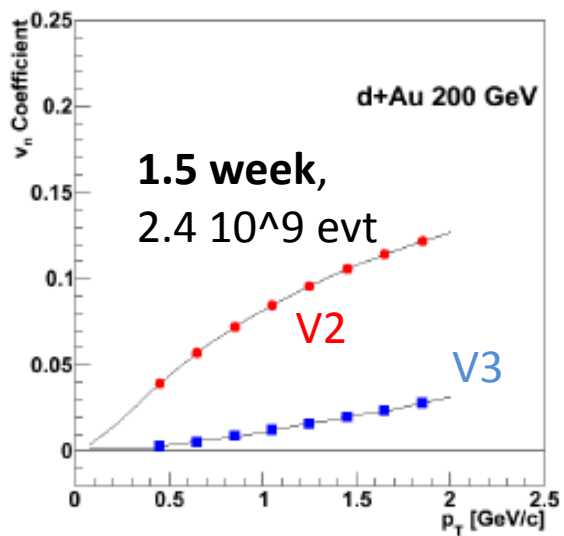


Figure 3.17: Shown are projected uncertainties for measurements of v_2 and v_3 coefficients in 0-5% central $d+Au$ collisions at 200, 62, 39, and 20 GeV energies in the top left, top right, lower left, and lower right panels respectively. For the much smaller data sample at the lowest energy of 20 GeV, we do not quote projected uncertainties for v_3 since it is not clear if the event-plane method determination will be robust.

RBUP dAu request: 7 weeks

- 0.5 week setup
- **2.0 week d+Au 20 GeV** 0.9 /nb/week
- 0.5 week change
- **2.0 week d+Au 39 GeV** 3.8 /nb/week
- 0.5 week change
- **1.5 week d+Au 62 GeV** 10.6 /nb/week
- 0.5 week change
- **1.5 week d+Au 200 GeV** 110 /nb/week
- This plan will yield 2.4 billion, 230 million, 110 million, and 7 million central d+Au events ($z < 10\text{cm}$, 0-5% centrality) at energies of 200, 62, 39, 20 GeV respectively
- This is our request (4 energies, 7 weeks), we are considering **how to adapt it to 5 weeks , with an optimization of the relative lengths** of the periods

dAu: beam energy scan

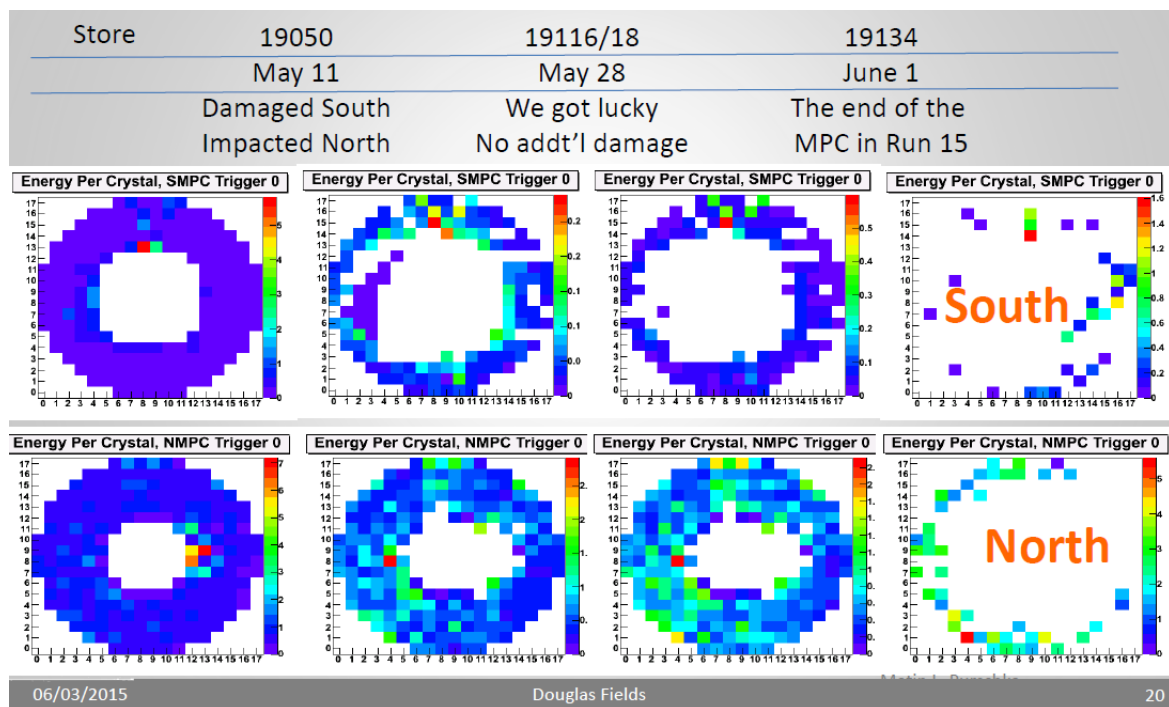
- In conclusion, the physics case is exciting and outstanding, the 4 energies are important. At this stage we need all of them, with sufficient precision. in ≥ 5 weeks (**PAC: “at least 5 weeks”**)[*].
- The values 19.6, 39., 62.4, and 200.7 GeV/nucleon center-of-mass energy are OK, and complete the available set. In particular 62.4, 200.7 and 19.6 GeV
- We **foresee** an **online analysis** that will give a rapid look at v_2 in the central arm, and allow **some optimization** of the relative lengths of the periods, and is possible thanks to 15 years of improvement efforts in PHENIX.
- calendar under pressure, implies optimization ?

[*] are 43 days compatible with 5 physics weeks ?

Calendar

- (Cooldown: delayed 2 weeks)
- (1st Time Meeting: Jan 5)
- White/Pink Sheets: done ; Blue: on going
- Shield wall close to ready
- Watch shifts: 12 January
- Start flammable gas next week
- Cooldown 19 January
- Beam setup, Expect to lose access to IR on Jan. 23 ?
- Full shifts 26 January
- First (physics) collisions in PHENIX expected by Feb

Protection from beam loss



A dump on
the DX
magnet ?

- Au beam in asymmetric collisions has been very destructive for some detectors (MPC, VTX strips).
- Task force after run15: Improved understanding of ways to prevent damage to experiments from abort kicker prefires
- Thanks to implementations made by CAD similar events are not likely in the future

MPC

Repairing is complete

and Protection of each individual channel has been added:

Should handle at least 400x more light.

MPC is ready (and should probably resist)

Also: MPC-EX cooling improvements, repair south half-layer, and firmware upgrade

Status End of Run-15: VTX-Stripixel: B3-West

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5	Module #6
B3L00 4W00L03						
B3L01 4W00L15						
B3L02 4W01L27						
B3L03 4W03L06						
B3L04 4W04L18						
B3L05 4W05L13						
B3L06 4W06L10						
B3L07 4W07L04						
B3L08 4W08L12						
B3L09 4W09L25						
B3L10 4W10L02						
B3L11 4W11L19						

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5
08 B2L08 3W00L09					
09 B2L09 3W01L01					
10 B2L10 3W06L13					
11 B2L11 3W03L17					
12 B2L12 3W07L12					
13 B2L13 3W05L19					
14 B2L14 3W02L04					
15 B2L15 3W04L18					

PAST: END of run 15

VTXSP

Status: VTX-Stripixel: EAST-B2

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5
08 B2L08 3W00L09					
09 B2L09 3W01L01					
10 B2L10 3W06L13					
11 B2L11 3W03L17					
12 B2L12 3W07L12					
13 B2L13 3W05L19					
14 B2L14 3W02L04					
15 B2L15 3W04L18					

Status End of Run-15: VTX-Stripixel B3-East

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5	Module #6
12 B3L12 4E12L28						
13 B3L13 4E13L07						
14 B3L14 4E15L01						
15 B3L15 4E14L17						
16 B3L16 4E22L16						
17 B3L17 4E20L05						
18 B3L18 4E18L11						
19 B3L19 4E19L14						
20 B3L20 4E17L23						
21 B3L21 4E21L24						
22 B3L22 4E16L08						
23 B3L23 4E23L28						

After repairs of silicon modules and repositioning:

NOW : Beginning of run 16

New Configuration: VTX-Stripixel: B3-West

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5	Module #6
00 B3L00 4W00L03						
01 B3L01 4W00L15						
02 B3L02 4W11L19						
03 B3L03 4W09L25						
04 B3L04 4W04L18						
05 B3L05 4W05L13						
06 B3L06 4E16L08						
07 B3L07 4W07L04						
08 B3L08 4W08L12						
09 B3L09 4W03L06						

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5
08 B2L08 3W01L01					
09 B2L09 3W00L09					
10 B2L10 3W06L13					
11 B2L11 3E14L14					
12 B2L12 3W03L17					
13 B2L13 3W02L04					
14 B2L14 3W05L19					
15 B2L15 3W04L18					

Status After Repair : VTX-Stripixel: EAST-B2

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5
08 B2L08 3W00L09					
09 B2L09 3W01L01					
10 B2L10 3W06L13					
11 B2L11 3W03L17					
12 B2L12 3E14L14					
13 B2L13 3W05L19					
14 B2L14 3W02L04					
15 B2L15 3W04L18					

New Configuration: VTX-Stripixel EAST-B3

Ladder/Module	Module #1	Module #2	Module #3	Module #4	Module #5	Module #6
12 B3L12 4E23L28						
13 B3L13 4E18L11						
14 B3L14 4E14L17						
15 B3L15 4E15L01						
16 B3L16 4W06L10						
17 B3L17 4E22L16						
18 B3L18 4E13L07						
19 B3L19 4E21L24						
20 B3L20 4E17L23						
21 B3L21 4E19L14						
22 B3L22 4E12L28						
23 B3L23 4E20L05						

Rachid Nouicer

Sub-system commissioning/debugging

- Initial setup started from end 2015
- **All detector subsystems installed, connected, and ready for commissioning**
- F/VTX needs one day for interlock checks
- PHENIX Magnet Review/Checks Done (white sheets)
- PHENIX Rack Safety Checks Done (pink sheets)
- PHENIX Safety Checks To Be Done This Week (blue sheets)
- Shield Wall Stacked, Almost Ready to Roll In
- UPS Maintenance Underway
- Non-flammable Gases ready to flow (for MUID check-out)
- Flammable Gas Flow Starting Next Week
- **Subsystems will be turned to experts next week**
- Running with cosmics will start this week
- Access reduced after ~23 January?

Shifts

- Shifts: mostly covered up to Easter
- Run Coordinator : DJ at BNL from the 7th january
- Period Coordinators : up to Easter:

01 12 John Haggerty

01 26 Sarah Campbell

02 09 Martin Purshke

23 02 Jin Huang

03 08 Hubert Van Hecke

Thanks to the various beam periods
foreseen

We look forward to
a very fruitful data taking
for the last PHENIX RUN

THANKS